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Behavioural economics/insights and health and nutrition in low- and middle-income countries

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Question

What is the state of application of behavioural insights/economics to health- and nutrition-related matters and preliminary evidence of the effectiveness?

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1. Overview

Households and individuals make decisions every day that directly impact on their health and nutrition outcomes, which are influenced by many factors, including social norms, myths and misinformation, impulsivity and procrastination, and the country context they live in (Ashton et al, 2015, p. 7; Luoto, 2017, p. 1). Behavioural economics/insights can help explain this decision making and create an environment in which people make choices that are better aligned with their aspirations, objectives, and perceived welfare¹ (Ashton et al, 2015, p. 8). Interventions might involve supplying the correct information, refraining existing information, streamlining choices, or facilitating commitment to a welfare-enhancing decision² (Ashton et al, 2015, p. 11). Insights from behavioural economics have mainly been applied in high income countries but are now being applied in a variety of low- and middle-income settings to improve health behaviours (Trujillo et al, 2015, p. 748). This rapid review looks at available literature on the application of behavioural economics/insights to health- and nutrition-related matters in low and middle income countries, focusing primarily on interventions relating to reproductive health, child health, and child nutrition.

Tools from behavioural economics/insights generally fall under strategically employed financial incentives and decision tricks or “nudges” and include: defaults; reminders; framing; commitment devices; labelling; micro incentives; social influences; timing and salience of information; identity priming; and simplification. Various studies have suggested that commitment devices, material incentives, framing, social influences, and defaults have been particularly effective in encouraging decision making leading to healthy behaviour around reproductive health and child health and nutrition (Ashraf, 2013; Trujillo et al, 2015; Ashton et al, 2015).

Luoto (2017, p. 168) finds that the evidence base for the potential of behavioural economics to address health problems in low and middle income countries is mostly made up of small-scale randomised field studies. The ability of behavioural economics to ‘change behaviours at the level of general populations or to achieve long-term sustained behaviour change remains largely unanswered’ (Luoto, 2017, p. 168). Much less literature appeared to focus on child health and nutrition than on reproductive health, and more studies referred to using behavioural economics than behavioural insights. Some of the literature offered more suggestions as to the potential of behavioural economics/insights for addressing maternal and child health problems than concrete examples of where it has been used effectively.

¹ In contrast with social and behaviour change communication, behavioural economics ‘does not seek to modify personal or cultural values, or to impose judgment on which beliefs or preferences are best’ (Ashton et al, 2015, p. 11).

² It should be noted that interventions which target only behavioural problems are unlikely to change outcomes in contexts where there is no access to affordable health services (Ashton et al, 2015, p. 8). In addition, ‘in the context of deeply rooted poverty, women’s economic dependency, inadequate health systems, and constrained care options, even good choices can result in bad outcomes’ (Kruk et al, 2016, p. 2301).

2. Behavioural economics/insights

Behavioural economics examines systematic behavioural biases and why individuals make decisions that potentially compromise their own future wellbeing and the welfare of others (Ashton et al, 2015, p. 4, 7). Behavioural economics ‘focuses on how context and social and physical environments influence and constrain human behaviour, often more than we realise’ (Luoto & Carman, 2014, p. 2). Behavioural insights more broadly refer to the ‘use of findings from behavioural science to understand how people behave in practice’ (Hallsworth et al, 2016, p. 10). It can be used to reassess, rethink and redesign whole health systems (Hallsworth et al, 2016, p. 11).

Ashton et al (2015, p. 4-5) identify four sets of opposing forces which influence peoples decision making around health³.

- **‘Illusion ↔ Reality:** People make decisions based on what they *believe* to be true, hinging on their own experiences, reference points, or estimates—rather than what is objectively or measurably true. Couples may choose not to use a modern method because they believe it causes infertility or disease, or because they underestimate the probability of becoming pregnant.’
- **‘Self ↔ Other:** Individuals are sometimes influenced by others’ interests, or by social norms or expectations. For example, even when a woman prefers to deliver in a clinic or hospital, she may forego the opportunity due to the expectations of her partner, family, or community. Similarly, a couple may not desire a large family, but may have additional children to conform to social identities or norms.’
- **‘Thinking fast ↔ Thinking slow:** Cognition is a limited resource, and people living in poverty often exhibit a depletion of cognitive capacity due to the complexity and unpredictability of daily life. Sometimes individuals select choices that require the least mental energy or cognitive cost (often without realising it). Busy providers may recommend a contraceptive method because they have prior experience with it, which could result in a different recommendation than processing all of the information available about different methods to make the best decision for their patient’s individual needs.’
- **‘Today ↔ Tomorrow:** Every day individuals face a trade-off between costs today and costs tomorrow. For example, a woman may delay the cost (or effort/time required) of going to a clinic today, perceiving the cost to be lower tomorrow. However, repeating this decision results in procrastination and it underweights the high costs of pregnancy complications in the future.’⁴

A number of evidence based tools from behavioural economics have been developed to help individuals make better decisions in light of these opposing forces, although many have not been researched or evaluated in relation to reproductive health and family planning, and some can

³ See also Luoto and Carman (2014) for examples of the implications of behavioural economics concepts of bounded rationality, bounded willpower, and bounded selfishness in relation to health interventions and Luoto (2017) for examples of behavioural explanations of health decision making in low- and middle-income countries.

⁴ More examples of how behavioural biases may affect decision making around reproductive health can be found in Ashton et al (2015, p. 16-25). See also Ashraf (2013) and Chhabra et al (2015) for other decision making around health examples.

also have negative consequences – see Table 1 below for a summary of the tools (Ashton et al, 2015, p. 5)⁵. Generally they fall under strategically employed financial incentives and decision tricks or “nudges” (Buttenheim & Asch, 2013, p. 582). These tools aim to make it easy for people to make good health decisions and harder to make poor ones (Buttenheim & Asch, 2013, p. 582; Ashraf, 2013, p. 3).

Behavioural economics/insights is suggested to affect policy design in three stages by: ‘defining a relevant problem; diagnosing the relevant behavioural barrier(s) that result(s) in the given problem, and designing a solution to the problem that is built on how people actually behave (versus how they should behave)’ (Luoto & Carman, 2014, p. 40; Datta & Mullainathan, 2012, p. 3). Hallsworth et al (2016, p. 4-5) suggest that a simple way to apply behavioural insights to policy, and hence making behavioural change more likely, is to use the Easy, Attractive, Social and Timely (EAST) framework. This involves: i) reducing even very small barriers to make healthy behaviour more likely; ii) creating simple and clear messages, or new design features, to attract our limited attention; iii) showing or telling people that others are performing a healthy behaviour; and iv) launching interventions at times when people are most receptive to change (Hallsworth et al, 2016, p. 4-5). Datta and Mullainathan (2012, p. 16-26) also offer a number of behavioural design principles, based on behavioural insights into decision making tendencies, which can make interventions more effective, including: i) facilitate self-control by employing commitment devices; ii) reduce the need for self-control; iii) remove snags to choosing; iv) use micro-incentives; v) reduce inattention through reminders and implementation intentions; vi) maximise the impact of messaging through framing effects, social comparisons, norms; and vii) frame messages to match mental models (see also Luoto & Carman, 2014, p. 51- 54). The importance of trialling and evaluating interventions has also been emphasised (Hallsworth et al, 2016, p. 5; Luoto & Carman, 2014, p. 56; Datta & Mullainathan, 2012, p. 3).

⁵ Untested examples of how these tools could be used in a reproductive health context can be found in Ashton et al (2015, p. 5-6). See also Buttenheim & Asch (2013), Chhabra et al (2015, p. 15-24), and Kruk et al (2016, p. 2302) for examples of potential uses of behavioural economics in maternal and new-born health. Taylor & Buttenheim (2013) also provide examples of the potential uses of behavioural economics tools in the prevention of mother to child HIV transmission.

Table 1: Tools from behavioural economics

Tool	Description
Defaults	The option an individual will receive if he or she does not make an active choice. A carefully chosen default can help overcome problems like procrastination, complex and confusing choices, social pressures, or the cognitive costs of decision-making.
Reminders	Reminders can help decrease the cognitive burden required to sequence or complete a complex task.
Framing	The language used to describe a set of choices can shape people's decision-making. Framing can help when people misperceive risks, by making certain outcomes more salient than others.
Commitment Devices	Pre-committing to a particular decision can help people align their actions with their preferences. This helps with procrastination, social pressures, and present bias.
Labelling	Exploiting an individual's "mental accounting" to encourage spending on investment goods that will benefit his or her own welfare.
Micro Incentives	Token rewards, particularly those creating social recognition or salience, can be more motivating than the monetary value of the reward.
Social Influences	Harnessing social norms or pressures to encourage beneficial decision-making can be used to overcome biases in decision-making.
Timing and Salience of Information	People may process complex information more effectively if the information is presented in a targeted way, at a specific time, or through a particular agent.
Identity Priming	Increasing the saliency of an individual's gender, race, or role can be used to make certain choices (and their consequences) more salient
Simplification	Making the terms/consequences of a decision more clearly understood, at the correct moment in time, can reduce the biases and cognitive costs of decision-making.

Source: Ashton et al (2015, p. 5-6)

Trujillo et al (2015, p. 749) suggest that behavioural economics interventions may be useful in treatment seeking behaviours, health professional behaviours, patient compliance behaviours and lifestyle and prevention behaviours.

Ashraf (2013, p. 3) suggests that commitment devices, material incentives, and defaults have been particularly effective in addressing present bias⁶ and limited attention. Principles from

⁶ Present bias 'describes our tendency to overvalue the present and discount the future', benefits seem more valuable in the present than we imagine they will be in the future, while costs seem greater today than we imagine they will be tomorrow (Ashraf, 2013, p. 3).

behavioural economics have been successfully applied in randomised trials to improve smoking cessation, medication adherence, exercise and weight loss, and organ donations (Ashton et al, 2015, p. 9; Taylor & Buttenheim, 2013, p. 2; Luoto & Carman, 2014, p. 27-38). These studies have mostly been implemented in higher income countries, although experiments are increasingly being adapted for low- and middle-income settings (Ashton et al, 2015, p. 9; Luoto, 2017, p. 158; Taylor & Buttenheim, 2013, p. 5). Luoto (2017, p. 159) finds that the evidence base for the promise of behavioural economics in low- and middle income countries is still predominately made up of small-scale randomised controlled trials, with policy interventions or scaled approaches based on behavioural economics principles few and far between, as elsewhere. There are criticisms that the effect sizes from behavioural economics or “nudge” policies are inadequate compared to the scale of the problem and that more traditional approaches may produce the largest impacts in the shortest amount of time (Luoto, 2017, p. 159; Luoto & Carman, 2014, p. 4). On the other hand, Luoto (2017, p. 162, 168) finds that despite their successes, traditional approaches have generally fallen short of the scale of health behaviour changes needed, due perhaps to being based on the rational model, and that insights from behavioural economics could be a positive addition. However, Johnston (2016, p. 111) argues that behavioural economics ‘does not recognise the role of systemic (rather than individual) factors in explaining poor health, which are diverse, specific to particular health conditions, and in some cases deeply political’.

3. Behavioural economics/insights and reproductive health

Ashton et al (2015, p. 26-35) prepared a review summarising opportunities for the application of behavioural economics in relation to reproductive health and family planning in Sub-Saharan Africa and South Asia. They see a considerable scope for applying the tools of behavioural economics to reproductive health (Ashton et al, 2015, p. 36). They suggest that specific opportunities for behavioural economics tools in reproductive health interventions include correcting wrong beliefs, changing norms, making family planning easy, and motivating service providers (Ashton et al, 2015, p. 35-36).

However they note that there has been relatively little application of behavioural economics to reproductive health challenges in developing countries (Ashton et al, 2015, p. 8, 26). Ashton et al (2015, p. 36) also warn that due to unique issues that do not necessarily appear in other domains of economics or health, including power inequalities across gender and age and the risks of coercion, ‘earlier work in behavioural economics may not directly translate to reproductive health’. Religious and personal reasons, which lead to deeply held beliefs or powerful social forces, can drive family planning decisions, while the reasons connected to non-use of medical care often involve economic and geographical barriers or lack of information (Chowdhury et al, 2013, p. 18).

When looking at the health policy recommendations emanating from behavioural economics principles relevant to low- and middle-income country settings, Trujillo et al (2015, p. 747) found⁷

⁷ Used a vignette-based online survey to assess the opinions of 520 policymakers and practitioners around the world about health policy recommendations emanating from behavioural economics principles that are relevant to low- and middle-income country settings (Trujillo et al, 2015, p. 747). However, there are concerns over the generalisability of the findings as the survey was sent to the 6535 subscribers of the Center for Global Development’s (CGD) global health newsletter and only 8 per cent replied (Trujillo et al, 2015, p. 479). The survey sample is representative of the CGD pool (Trujillo et al, 2015, p. 479).

'strong support for health policies based on the concepts of framing choices to overcome present bias; providing periodic information to form habits; and messaging to promote social norms' from policymakers and practitioners (see also Datta & Mullainathan, 2012, p. 23). However, there was 'less support for policies which use cash rewards as extrinsic motivators either to change individual behaviour related to the management of chronic conditions or to mitigate risky sexual behaviour' as a result of normative concerns and perceived lack of effectiveness of such interventions (Trujillo et al, 2015, p. 747). This is despite a number of studies which showed the effectiveness of using monetary rewards to reduce risky sexual behaviour (Trujillo et al, 2015, p. 753).

Examples of the use of behavioural economics/insights in reproductive health interventions

Incentives

Conditional cash transfers, which can sometimes act as financial incentives for behaviour change, 'have been effective in increasing the use of contraception, delaying marriage, and increasing the use of antenatal care and facility-based delivery' (Ashton et al, 2015, p. 28; WDR team, 2015, p. 151). In Nepal, the Safe Delivery Incentive Programme, which paid health workers for each attending patient and patients for using the services, reduced the probability of women delivering at home and increased the use of skilled attendance at delivery (Johnston, 2016, p. 110). A programme using similar incentives in India, the Janani Suraksha Yojana programme, increased the uptake of antenatal care, substantially increasing the proportion of women giving birth in health facilities (Johnston, 2016, p. 110; Taylor & Buttenheim, 2013, p. 3). The incentive scheme was also linked with a 3.7 reduction in perinatal deaths per 1000 pregnancies and a reduction of 2.3 neonatal deaths per 1000 live births (Taylor & Buttenheim, 2013, p. 3). Conditional cash transfers have also proven to be effective in increasing utilisation of preventive health-care services and improving nutrition and some health outcomes (Trujillo et al, 2015, p. 750).

The use of incentives resulted in higher rates of follow-up visits for IUDs among women who received incentives to make a follow-up visit in a study in India (Chowdhury et al, 2013, p. 25).

Women were given vouchers for motorcycle transport to clinic appointments and vouchers for medical providers to address the supply side problems of access to maternal health services in Uganda, which included geographical inaccessibility, lack of transport, and financial burdens (Taylor & Buttenheim, 2013, p. 4). 'Initial data showed an increase in antenatal, delivery and postnatal care as well as an increase in the number of safe deliveries in the intervention group from <200 deliveries/month to over 500 deliveries/month' (Taylor & Buttenheim, 2013, p. 4).

Trujillo et al (2015, p. 750; see also Johnston, 2016, p. 110) found that 'experiments in behavioural economics indicate that cash incentives structured in small and frequent rewards can be effective to overcome present costs (that tend to be highly valued) to obtain long-term changes in behaviour'. Johnston's (2016, p. 111) review of health-incentive transfers, however, suggests that there is 'mixed evidence on their effectiveness, but some programmes do seem to have achieved their desired aims'. She also highlights that there are ethical issues around their design and concerns about sustainability after the end of an intervention (Johnston, 2016, p. 111). There may also be unintended negative effects from the use of financial incentives (Luoto & Carman, 2014, p. 24-25; Taylor & Buttenheim, 2013, p. 6). In addition, Johnston (2016, p. 111)

argues that by focusing on poor choices by individuals, such interventions ignore the social and economic forces that produce ill-health.

Labelling and commitment devices

The technique of labelling has been used in rural Kenya, and it was found that 'locked savings boxes that are labelled (mentally) as "savings for health expenses" have increased women's investment in preventive health' (Ashton et al, 2015, p. 28). There was also an element of social commitment, as when individuals were invited to make deposits into savings accounts labelled for health expenditures, those investing in a group setting saved and invested more in preventive health compared with those making deposits on their own (Ashton et al, 2015, p. 30). Luoto (2017, p. 164) also finds examples of commitment savings accounts to address present bias in a variety of low- and middle-income countries.

The Berhane Hewan programme in Ethiopia involved a public commitment by parents and their daughters to delay marriage for at least the duration of the two-year programme (Ashton et al, 2015, p. 30). Families were also told they would receive a goat upon successful completion of the programme, to incentivise participation and offset financial costs of delaying marriage (Ashton et al, 2015, p. 30; Luoto, 2017, p. 167). A quasi-experimental evaluation of the programme found that it delayed marriage among 10-14 year olds and increased the use of family planning services among sexually active and married adolescents (15-19 year olds) (Ashton et al, 2015, p. 30).

Social influences

The PRACHAR programme in Bihar, India, developed to prevent child marriage and increase child spacing, has a component aimed at influencing community and family members and instigating pro-social pressure to delay marriage (Ashton et al, 2015, p. 31). A retrospective study, with random cluster sampling of participants and a control group, suggests that PRACHAR delayed age at marriage and first birth and may have increased the use of contraceptives to delay second pregnancy, including among the most economically disadvantaged groups (Ashton et al, 2015, p. 31).

A randomised experiment in Bangladesh, found that 'conducting community discussions in the homes of opinion leaders, at central points in villages' social networks, was five times more effective at increasing take up of modern contraceptives than conventional field worker visits' (Ashton et al, 2015, p. 33).

A study of a participatory women's group in Nepal aimed at improving health outcomes, found that while only 8 per cent of women of reproductive age and 37 per cent of pregnant women joined groups, neonatal mortality rates dropped by 30 per cent and maternal mortality by a factor of five (Buttenheim & Asch, 2013, p. 583). Evaluations suggest that spreading of behaviours and beliefs beyond the group was an important component of the intervention's successes (Buttenheim & Asch, 2013, p. 583).

Timing and salience of information

There is 'evidence that Nepali women who receive health education immediately after delivering are more likely to use contraception six months later, compared with those who received education three months after delivery' (Ashton et al, 2015, p. 32).

Examples of interventions aimed at health care providers

Incentives

A randomised experiment in Zambia found non-cash incentives for health extension workers to be more effective at increasing community-based provision of services than cash (although a combination of the two approaches was found to be even more effective) (Ashton et al, 2015, p. 29). Non-cash incentives in the form of peer recognition were also found to be more effective than financial incentives to motivate health extension workers in Zambia to promote and sell condoms (Luoto, 2017, p. 165; Ashraf, 2013, p. 6).

A study in Egypt found that supply-side incentives increased the likelihood of providers asking clients about a follow-up family planning visit (Chowdhury et al, 2013, p. 25).

Social influences

Harnessing social norms can be beneficial; social prestige or recognition was found in an evaluation of BRAC in Bangladesh to be a key determinant in retaining community health workers (Ashton et al, 2015, p. 29).

Interventions like citizen report cards, which equip communities to hold officials and providers accountable to them, can increase utilisation of services and, in some cases, increase quality (Ashton et al, 2015, p. 32).

Simplification

Simplification through task shifting strategies that authorise non-physician providers such as midwives, nurses and community based health extension workers, who are often closer to rural and marginalised communities, to deliver essential services can mitigate workforce shortages and inadequate provider skill mix and has the potential to improve health outcomes (Ashton et al, 2015, p. 35).

4. Behavioural economics/insights and child health

Examples of the use of behavioural economics/insights in child health interventions

Incentives

The technique of micro incentives was used successfully in India, where offering a bag of lentils, equivalent to a half-day's wages for an agricultural labourer, almost doubled the number of women bringing their children to a vaccine camp for immunisations (Ashton et al, 2015, p. 29; Luoto, 2017, p. 165; Ashraf, 2013, p. 4). Neutralising present bias through the use of lentils as

incentives had a bigger impact than just making immunisations easily available (Ashraf, 2013, p. 4).

Framing

Buttenheim & Asch (2013, p. 582) note that loss frames (emphasising the harms associated from not taking an action) have been found to induce stronger intentions to vaccinate children and purchase point-of-use water treatment systems, either in place of or when paired with gain frames (emphasising the benefits from taking the same action) (see also Datta & Mullainathan, 2012, p. 24). Although, the WDR team (2015, p. 149) instead found that 'gain- framed messages consistently improved adoption of preventive behaviours (such as vaccinations) when compared to loss-framed messages with the same objective information'.

Commitment devices

An intervention in India to improve long-term use of insecticide-treated bed nets to prevent malaria found higher rates of retreatment of nets and long-term use when households were given the option to prepay for a retreatment contract at the time of initial net purchase, compared to paying for retreatment as needed (Buttenheim & Asch, 2013, p. 583; Ashraf, 2013, p. 4).

A study in Kenya and Bangladesh looking at whether 'nudges' in the form of marketing messages derived from behavioural economics can increase water treatment among poor households found that both framing the message and committing with reminders increased water treatment in both settings, although usage was higher in Kenya (Luoto et al, 2014, p. 14).

Defaults

Waterborne diseases can cause widespread illness, particularly among children, but the usage of chlorine tablets that can disinfect water is low in Kenya (Ashraf, 2013, p. 5). Making chlorine use the default easy obvious option can make usage go up (Ashraf, 2013, p. 5). A series of randomised control trials in western Kenya found that providing free liquid chlorine dispensers at local water sources, providing a visual reminder to use it and making it easy to add, along with promotion by other community members and other messaging, increased chlorine use by 53 per cent (Ashraf, 2013, p. 5; see also Karlan and Appel, 2011, p. 246-249; Datta & Mullainathan, 2012, p. 20).

Social influences

Social influences have been found to be important in a pilot prevention of mother-to-child HIV transmission (PMTCT) programme in South Africa (Taylor & Buttenheim, 2013, p. 2). Providing HIV positive mentor mothers to pregnant women improved their medical follow-up, coping skills and HIV knowledge (Taylor & Buttenheim, 2013, p. 2). In addition, Taylor and Buttenheim (2013, p. 3) argue that the advice of the mentor mothers can come at the right time to play heavily into the decision making process of PMTCT patients. However, Taylor and Buttenheim (2013, p. 6) also point out that the use of mentors does raise 'concern for privacy and loss of social connectedness through the professionalisation of mentor mothers'.

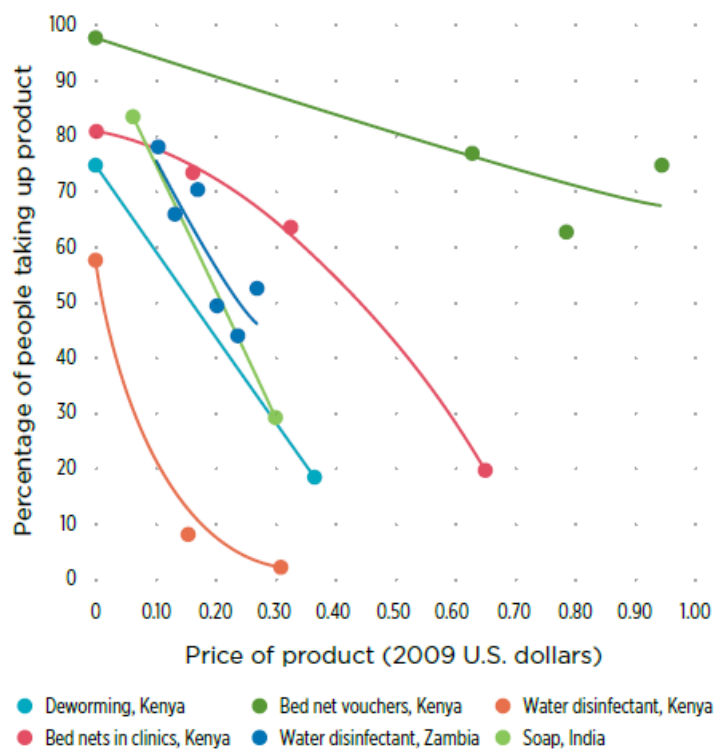
Defaults

In a number of countries with high HIV aids rates, including Botswana, Malawi, Uganda, South Africa and Zambia, health providers specifically recommend an HIV test to patients at antenatal clinics, and unless the patient declines, an HIV test is automatically performed (i.e. the default is testing and they have to opt out if they do not want it) (Taylor & Buttenheim, 2013, p. 4). The initiation of routine HIV testing in Botswana increased testing rates from 40 per 1000 persons to 104 per 1000 persons (Taylor & Buttenheim, 2013, p. 4).

Social influences

A series of evaluations found that even small price increases above zero lead to large drops in the number of people who choose to buy health products, including products which are very beneficial to child health – see figure 1 (WDR team, 2015, p. 150). The WDR team suggests that low prices make things affordable, while ‘free may convey a social norm: we all should be doing this’⁸.

Figure 1: Take up of health products in relation to price



Source: Abdul Latif Jameel Poverty Action Lab, 2011 in WRD team (2015, p. 150)

⁸ See Karlan & Appel (2011, p. 242-246) for a discussion of the benefits of selling versus giving of bed nets.

5. Behavioural economics/insights and child nutrition

Examples of the use of behavioural economics/insights in child nutrition interventions

Defaults

The power of defaults can be seen in an example of a child nutrition programme in India (Luoto, 2017, p. 166). The planned design was that households would only have to tell millers once whether they wanted their flour enriched with iron, and that millers would repeat this every time they returned, but the millers did the opposite and forced households to specify each time whether they wanted iron-fortified flour (Luoto, 2017, p. 167; Datta & Mullainathan, 2012, p. 20). The change in default resulted in significant drop-out from the programme and its failure to achieve its objective (Luoto, 2017, p. 167; Datta & Mullainathan, 2012, p. 20).

Datta and Mullainathan (2012, p. 20) found that most nutrition programmes trying to either get the poor to eat the types of food that naturally provide a balanced mix of micro- and macro-nutrients or to adopt special nutritional supplements have very little success. Behavioural insights suggest that 'it might be most effective to make balanced nutrition close to automatic by fortifying food that people already eat with extra micronutrients, much as the routine iodisation of salt has vastly reduced problems of iodine deficiency' (Datta & Mullainathan, 2012, p. 21).

Incentives

In Mexico, the conditional cash transfer programme Progresa offered cash incentives for making use of public clinics, with a focus on targeting low birth weight and child malnutrition (Karlan & Appel, 2011, p. 232). A randomised control trial found that 97 per cent of eligible families signed up, and enrolled children saw a 23 per cent reduction in illness overall, an 18 per cent drop in the incidence of anaemia, and a 1 to 4 per cent increase in height (Karlan & Appel, 2011, p. 233-234). Another study also found that families were spending an average of 70 per cent of the remaining money on increasing the quality and quantity of food available to the household (Karlan & Appel, 2011, p. 234).

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Key websites

- The Behavioral Economics in Reproductive Health Initiative (BERI): <http://www.beri-research.org/>

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